

## REMARKS

Claims 1-103 are pending in the present application. Claims 1-103 stand rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,118,811 (“Narumi”) in view of U.S. Patent No. 5,949,285 (“Ando”). Applicants respectfully traverse the rejection.

### **Claims 75-87 - Bandgap Elements**

Neither Narumi nor Ando, individually or combined, teaches or suggests each and every element as set forth in claim 75. For example, claim 75 recites “a calibration circuit comprising a first component, a digitally tunable second component, a current source coupled to the first component to generate a first parameter of the first component and coupled to the second component to generate a second parameter of the second component”. Since the Examiner uses many of the same or similar arguments in support of the rejection of claim 75 as were used in support of the rejection of claim 1, Applicants respectfully make the same or similar arguments in traversing the rejection of claim 75 as will be made in traversing the rejection of claim 1 as set forth below in the section entitled “**Claims 1-17**”.

In addition, claim 75 recites “a bandgap calibration circuit to generate a bandgap current substantially independent of temperature, the bandgap calibration circuit being responsive to the control output from the logic control block”. Other than stating that Narumi does not disclose these elements, the Examiner does not address, with any particularity, the manner in which Ando teaches or suggests these elements. In fact, Ando also does not specifically mention a bandgap calibration circuit, a bandgap current or a temperature. Applicants respectfully submit that neither Ando nor Narumi, individually or combined, teaches at least these elements.

For at least the above reasons, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) be withdrawn with respect to claim 75 and its dependent claims (i.e., claims 76-87).

### **Claims 1-17**

Neither Narumi nor Ando, individually or combined, teaches or suggests each and every element as set forth in claim 1. For example, claim 1 recites “a current source coupled to the first component to generate a first parameter of the first component, and coupled to the second component to generate a second parameter of the second component”. The Examiner has alleged that the first component is a mixer 150 of Narumi and that the second component is a signal processor 50 of Narumi. However, the Examiner acknowledges (and Applicants agree) that

Narumi does not teach or suggest a current source coupled to a first component to generate a first parameter of the first component, and coupled to a second component to generate a second parameter of the second component.

To maintain the rejection, the Examiner has alleged that Ando makes up for the teaching deficiencies of Narumi by presumably teaching either (A) a first constant current source CS1 connected to a common emitter of a first transistor Q1 and a second transistor Q2 of a first differential amplifier 1 or (B) a second constant current source CS2 connected to a seventh transistor Q7 connected to a common emitter of a fifth transistor Q5 and a sixth transistor Q6.

If the teachings of Ando are to be applied to teachings of Narumi as alleged by the Examiner, then the constant current source CS1 or CS2 would be coupled to the mixer 150 (i.e., the first component as alleged by the Examiner) of Narumi to generate a first parameter of the mixer 150. In coupling the constant current source CS1 or CS2 of Ando to the mixer 150 of Narumi either (1) the constant current source CS1 or CS2 of Ando becomes the third input to the mixer 150 of Narumi or (2) the constant current source CS1 or CS2 of Ando replaces an existing input 149, 151 of the mixer 150 of Narumi. These two cases are discussed individually below. It is respectfully submitted that either arrangement is improper.

In case (1), it is alleged that the constant current source CS1 or CS2 of Ando becomes the third input to the mixer 150 of Narumi. Neither Ando nor Narumi teaches or suggests a three-input mixer (e.g., coupling the constant current source CS1 or CS2 as a third input to the mixer 150). Accordingly, such a configuration is not enabled by either Ando or Narumi, individually or combined. In fact, Narumi is entirely silent as to the use of any constant current sources. Furthermore, since the mixer 150 of Narumi already operates with respect to two inputs 149, 151, adding a third input to the mixer 150 would undoubtedly change the principle of operation of the mixer 150 of Narumi which is a critical component in Narumi's self-calibrating apparatus. The mixer 150 already mixes calibrated transmitted signals 149 from the transmitter 22 with a mixing signal 151 from the local oscillator 106 to generate receiver calibration signals. The mixer 150 would have to change its principle of operation to accommodate a third input signal from a constant current source, thereby changing the principle of operation of the self-calibrating apparatus of Narumi. M.P.E.P. § 2143.01 strictly prohibits proposed modifications that would change the principle of operation of Narumi. See, e.g., M.P.E.P. § 2143.01 ("[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior

art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious”). Moreover, the Examiner has alleged that the reason for combining Ando and Narumi is “to control the gain by the gain control voltage”. Applicants respectfully submit that, by inserting a third input to an otherwise two-input mixer 150 of Narumi and connecting a constant current source CS1 or CS2 of Ando to the inserted third input, gain control is not further advanced by the modified mixer 150 of Narumi. In fact, Applicants challenge the alleged logical contention by the Examiner that the mixer 150 of Narumi is improved at all by connecting a constant current source CS1 or CS2 of Ando to the mixer 150 of Narumi. Applicants further challenge the alleged logical contention by the Examiner that the self-calibrating apparatus of Narumi is improved by connecting a constant current source CS1 or CS2 of Ando as a third input to an otherwise two-input mixer 150 of Narumi.

In case (2), it is alleged that the constant current source CS1 or CS2 of Ando replaces an existing input 149, 151 of the mixer 150 of Narumi. If the constant current source CS1 or CS2 of Ando replaces an existing input 149, 151 of the mixer 150 of Narumi, then the proposed modification would impermissibly render Narumi unsatisfactory for its intended purpose. See, e.g., M.P.E.P. § 2143.02 (“the proposed modification cannot render the prior art unsatisfactory for its intended purpose”). As stated above, the mixer 150 of Narumi mixes calibrated transmitted signals 149 from the transmitter 22 with a mixing signal 151 from the local oscillator 106 to generate receiver calibration signals. By replacing either input 149, 151 of Narumi with the constant current source CS1 or CS2 of Ando, the mixer 150 of Narumi would no longer generate the receiver calibration signals. Accordingly, the proposed modification would render the self-calibrating, self-correcting transceiver 20 of Narumi unsatisfactory for its intended purpose since, for example, the transceiver 20 of Narumi would be unable to self-calibrate or self-correct its receiver 24 of Narumi. Thus, the proposed modification of Narumi in view of Ando is improper. Moreover, the Examiner has alleged that the reason for combining Ando and Narumi is “to control gain by the gain control voltage”. Applicants respectfully submit that, by replacing either input 149, 151 of Narumi with the constant current source CS1 or CS2 of Ando, gain control is not further advanced by the mixer 150 of Narumi. In fact, Applicants challenge the alleged logical contention by the Examiner that the mixer 150 of Narumi is improved at all by connecting a constant current source CS1 or CS2 of Ando to the mixer 150 of Narumi. Applicants further challenge the alleged logical contention by the Examiner that the self-

calibrating apparatus of Narumi is improved at all by replacing either input 149, 151 of Narumi with the constant current source CS1 or CS2 of Ando. In fact, the effect would be detrimental to the performance of self-calibrating apparatus of Narumi since neither input 149, 151 of the mixer 150 of Narumi can be replaced by the constant current source CS1 or CS2 of Ando. Each input 149, 151 as described in Narumi plays a critical role in the self-calibrating apparatus of Narumi.

Applicants also cannot comprehend how connecting a constant current source CS1 or CS2 of Ando to a signal processor 50 (i.e., the second component as alleged by the Examiner) of Narumi will further improve the signal processor 50 of Narumi. In fact, Narumi is entirely silent as to the use of any current sources. Applicants are further confused as to how connecting a constant current source CS1 or CS2 of Ando to a signal processor 50 of Narumi will help “to control the gain by the gain control voltage”. Applicants respectfully submit that appending a superfluous constant current source to a signal processor will not produce the results as alleged by the Examiner.

For at least the above reasons, it is respectfully requested that the rejection under 35 U.S.C. § 103(a) be withdrawn with respect to claim 1 and its dependent claims (i.e., claims 2-17).

#### **Claims 18-37**

Neither Narumi nor Ando, individually or combined, teaches or suggests each and every element as set forth in claim 18. For example, claim 18 recites “generating means for generating a first parameter of the first component, and a second parameter of the second component”. Since the Examiner uses many of the same or similar arguments in support of the rejection of claim 18 as were used in support of the rejection of claim 1, Applicants respectfully make the same or similar arguments in traversing the rejection of claim 18 as were made in traversing the rejection of claim 1.

For at least the above reasons, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) be withdrawn with respect to claim 18 and its dependent claims (i.e., claims 19-37).

#### **Claims 38-49**

Neither Narumi nor Ando, individually or combined, teaches or suggests each and every element as set forth in claim 38. For example, claim 38 recites:

a current source;

a first component coupled to the current source through a first node;  
a digitally tunable second component coupled to the current source through a second node ....

Since the Examiner uses many of the same or similar arguments in support of the rejection of claim 38 as were used in support of the rejection of claim 1, Applicants respectfully make the same or similar arguments in traversing the rejection of claim 38 as were made in traversing the rejection of claim 1.

For at least the above reasons, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) be withdrawn with respect to claim 38 and its dependent claims (i.e., claims 39-49).

#### **Claims 50-74**

Neither Narumi nor Ando, individually or combined, teaches or suggests each and every element as set forth in claim 50. For example, claim 50 recites “a calibration circuit comprising a first component, a digitally tunable second component, a current source coupled to the first component to generate a first parameter of the first component and coupled to the second component to generate a second parameter of the second component”. Since the Examiner uses many of the same or similar arguments in support of the rejection of claim 50 as were used in support of the rejection of claim 1, Applicants respectfully make the same or similar arguments in traversing the rejection of claim 50 as were made in traversing the rejection of claim 1.

For at least the above reasons, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) be withdrawn with respect to claim 50 and its dependent claims (i.e., claims 51-74).

#### **Claims 88-103**

Neither Narumi nor Ando, individually or combined, teaches or suggests each and every element as set forth in claim 88. For example, claim 88 recites “generating means for generating a first parameter of the first component, and a second parameter of the second component”. Since the Examiner uses many of the same or similar arguments in support of the rejection of claim 88 as were used in support of the rejection of claim 1, Applicants respectfully make the same or similar arguments in traversing the rejection of claim 88 as were made in traversing the rejection of claim 1.

In addition, claims 102 and 103 recite a “bandgap current”. Other than stating that Narumi does not disclose these elements, the Examiner does not address, with any particularity, the manner in which Ando teaches or suggests these elements. In fact, Ando does not specifically mention a bandgap current. Accordingly, Applicants respectfully submit that a *prima facie* case of obviousness has yet to be presented. In a subsequent office action, if necessary, the Examiner is respectfully requested to identify, with particularity, the components from Narumi or Ando that teach or suggest each and every element as set forth in claims 102 and 103.

For at least the above reasons, Applicants respectfully request that the rejection under 35 U.S.C. § 103(a) be withdrawn with respect to claim 88 and its dependent claims (i.e., claims 89-103).


### CONCLUSION

In view of at least the foregoing, it is respectfully submitted that the pending claims 1-103 are in condition for allowance. Should anything remain in order to place the present application in condition for allowance, the Examiner is kindly invited to contact the undersigned at the below-listed telephone number.

Please charge any required fees not paid herewith or credit any overpayment to the Deposit Account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

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Respectfully submitted,

  
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